

In The Footsteps of Lewis and Clark

People, History, Geography, and Earth Science

**Steve F. Russell
Iowa State University
May 12, 2011**

Results of following the President' Instructions

- **A water route with practical portage was not discovered – a great disappointment to Jefferson**
- **Friendly relations were established with nearly all tribes**
- **A large number of maps were made documenting the entire route in a great amount of detail**
- **Hundreds of new species documented**
- **In the 1840s, the expedition results were used to lay claim to the territory, especially the northwest**

Expedition Chronology

- **1803**
 - **Down the Ohio River**
 - **Wintering at Camp Dubois 1803-1804**
- **1804 - 1805**
 - **Follow the Missouri River (Missouri, Iowa, Nebraska, South Dakota, and North Dakota)**
 - **Winter over in the Mandan Villages 1804-1805**

Expedition Chronology (cont.)

- 1805
 - Up the Missouri River through Montana
 - *****Westward across the Bitterroot Mountains***
 - ***Aug 10, 1805 (Lewis) - Sept 26, 1805 (Party)***
 - Down the Columbia River to the Pacific Ocean
- 1805-06
 - Winter encampment at Fort Clatsop on the Pacific Ocean
- 1806
 - Up the Columbia River to the Rocky Mountains
 - *****Eastward across the Bitterroot Mountains***
 - ***June 10, 1806 (Party) - July 8, 1806***
 - Down the Missouri and “home”

Factoids

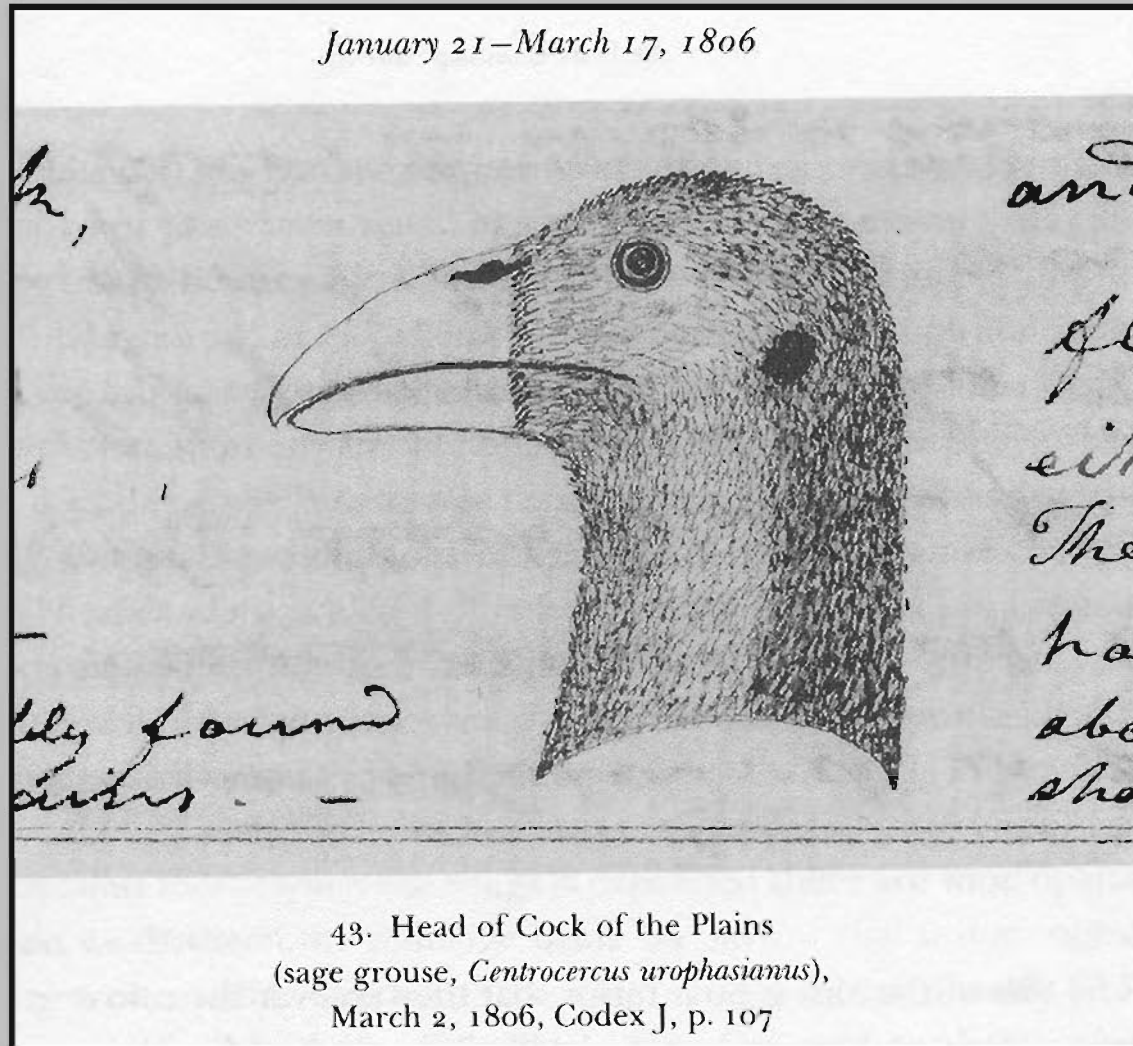
- **Sacajawea**
 - Not a guide but helped with landmarks and navigation on the Beaverhead River and Gallatin Valley in Montana
 - Gathered roots and herbs for the expedition
 - Her brother (Cameahwait) was chief of the Lemhi Shoshoni Tribe
 - Helped show tribes that the party was peaceful
 - What is her name? (Bird Woman)
 - What was her fate?
- **Only One Died – Sergeant Floyd**
 - Sioux City, Iowa (Appendix or Sepsis)

Campfire Stories

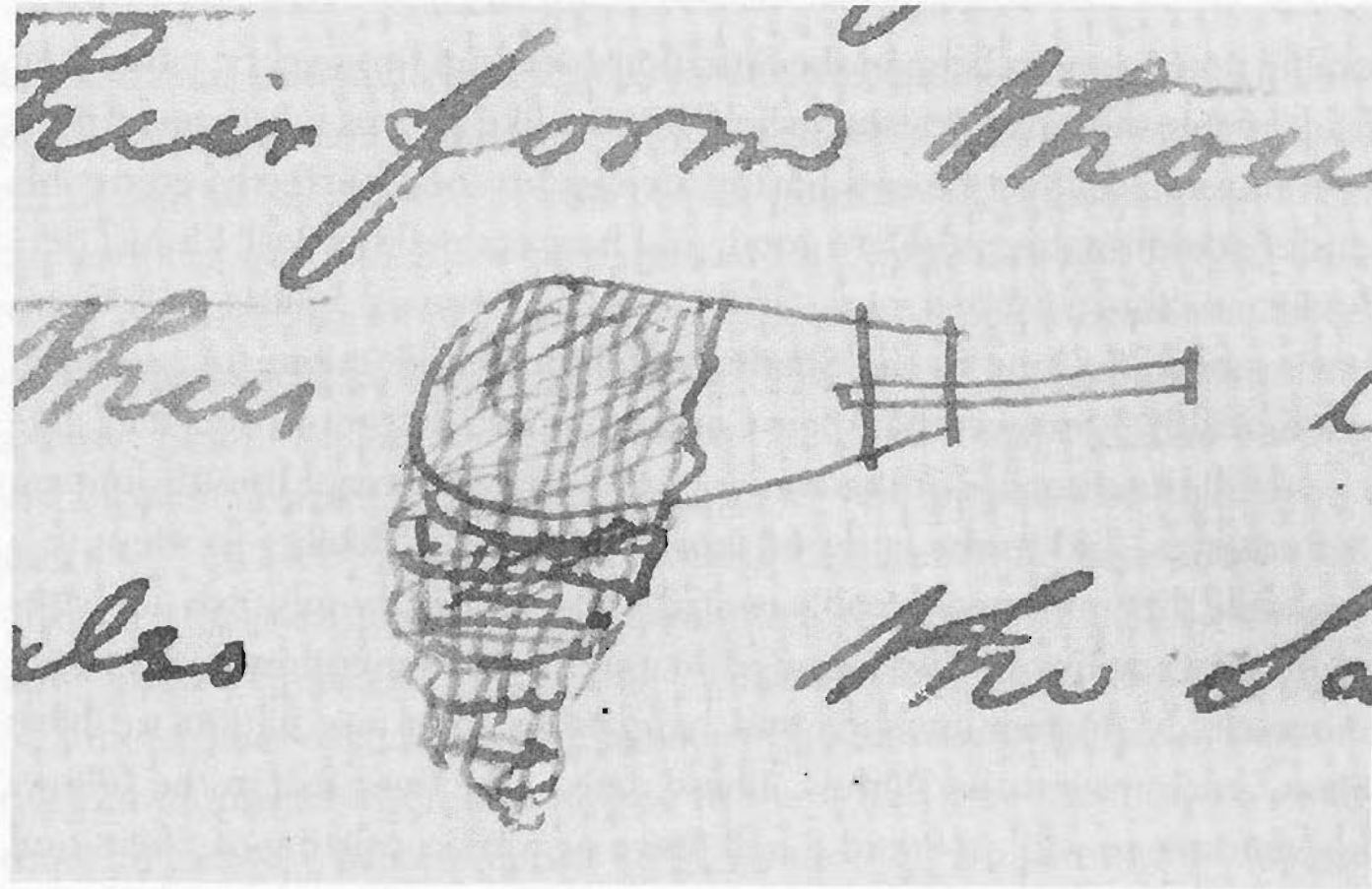
- **The Whiteman is coming** – Nez Perce oral tradition about prophecy that white men would be coming to their land
- **York and Clark** – York, who was Clark's slave, made the trip and was pretty much treated as an equal member in the party. However, he was not given his freedom and land at the end of the expedition and had to wait several years
- **Clark's romances** – Some Nez Perce believe that Clark fathered a son with a Nez Perce woman
- **The “fish eyes”** – The young Nez Perce boys that first encountered the expedition reported seeing strange beings with fish eyes and their faces upside down (*the beards*)

Geography, Maps & Earth Science

Images Recorded in Journals



Images Recorded in Journals



16. Fish Net, May 11, 1806, Voorhis No. 3

Lewis – The Naturalist



Western Pileated Woodpecker

*Dryocopus pileatus
picinus (Bangs)*

Lewis – The Naturalist



Clarkia or “Pinkfairies” or “Ragged Robin” *Clarkia pulchella* (Pursh)

The Corps of Discovery

1804-1806

“Lewis & Clark”

Exploring the Louisiana Purchase of 1803

- **Missouri**
- **Iowa**
- **Nebraska**
- **South Dakota**
- **North Dakota**
- **Montana**
- **Idaho**
- **Washington**
- **Oregon**



Indian Paintbrush

Castilleja septentrionalis

Figwort Family (Scrophulariaceae)

[illegible]

Lolo Creek and Hungry Creek in the Bitterroot Mountains of North-Central Idaho

My Work on Lewis & Clark

Camping & Hiking Alone



Steve F. Russell
Recording data on the Lewis & Clark Trail
East of the Sinque Hole

Camping & Hiking Alone



Camping & Hiking Alone

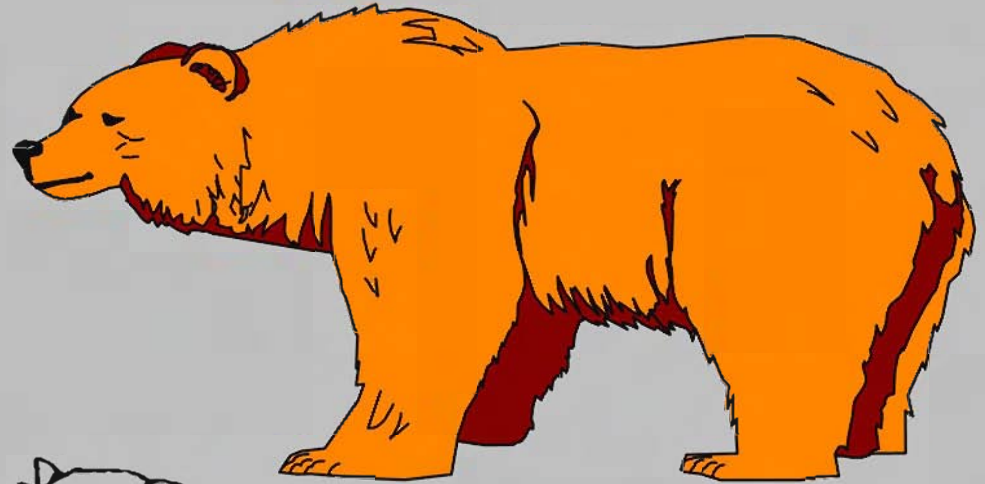
Was that a growl
I heard?



Steve



Pussycat



Hungry Bear



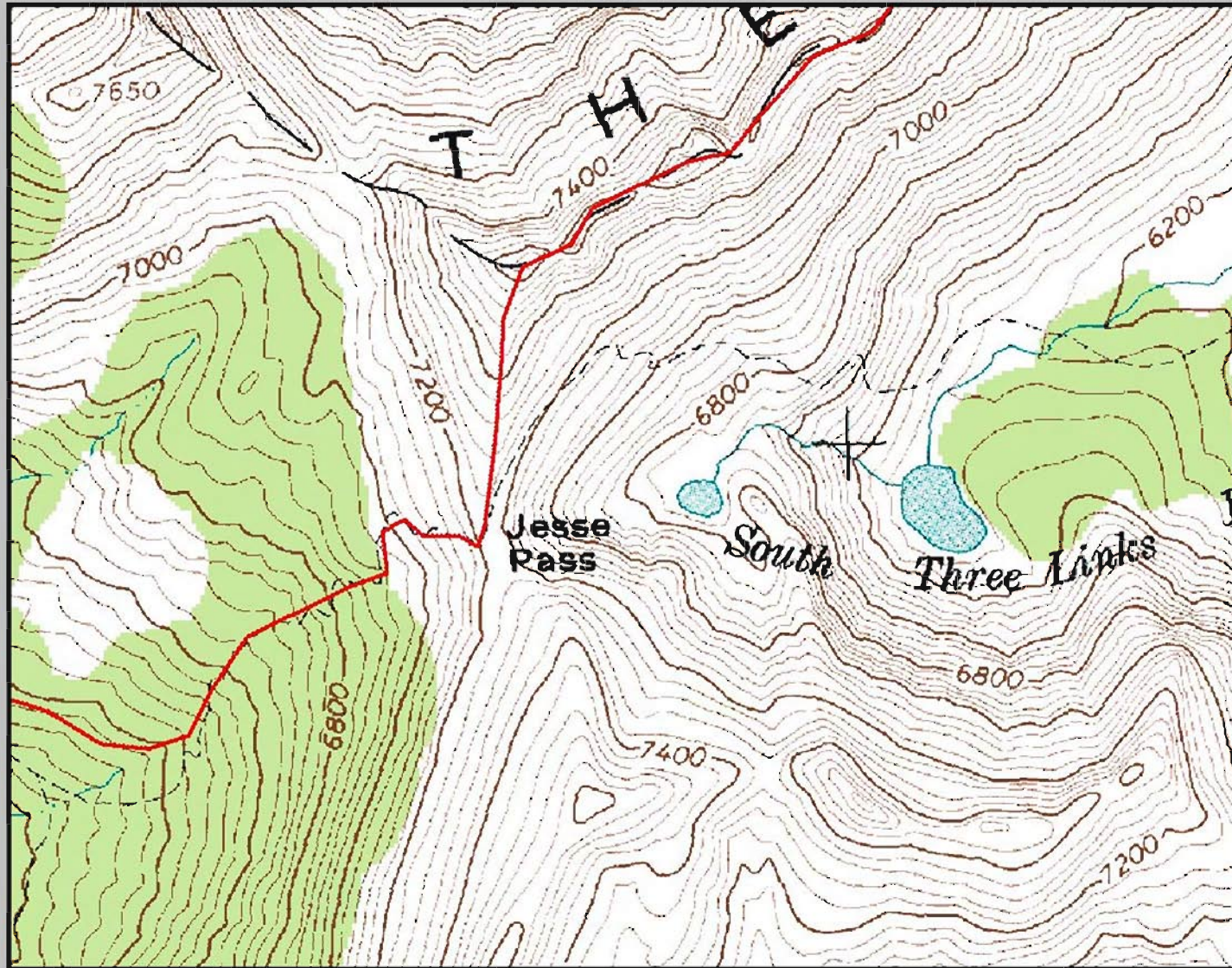
Mountain Lion
(Cougar)

This map illustrates the geographical context of the Bitterroot National Monument. Key features include:

- Nez Perce Reservation:** Located in the northwest, spanning parts of Idaho and Washington.
- Bitterroot Mountains:** A prominent mountain range running north-south through the center of the monument area.
- Lolo Trail:** A red line indicating a historical trail route that winds through the mountains and valleys.
- Bitterroot Valley:** A major valley located to the east of the Bitterroot Mountains.
- Lemhi Pass:** A mountain pass located in the southern part of the monument area.
- River of No Return Wilderness:** A designated wilderness area located to the west of the Bitterroot Mountains.
- Idaho and Montana:** The states bordering the monument area.
- Nez Perce Reservation:** A large reservation area located to the west of the Bitterroot Mountains.
- Missoula:** A city located in the north-central part of the monument area.
- Hamilton:** A city located in the central part of the monument area.
- Salmon:** A city located in the southern part of the monument area.
- Dillon:** A city located in the southeast part of the monument area.
- Beaverhead:** A city located in the southeast part of the monument area.
- Butte:** A city located in the southeast part of the monument area.
- Deer Lodge:** A city located in the southeast part of the monument area.
- Anaconda:** A city located in the southeast part of the monument area.
- Phillipsburg:** A city located in the southeast part of the monument area.
- Granite:** A city located in the southeast part of the monument area.
- Deer Lodge:** A city located in the southeast part of the monument area.
- Butte:** A city located in the southeast part of the monument area.
- Silver Bow:** A city located in the southeast part of the monument area.
- Hamilton:** A city located in the central part of the monument area.
- Ravalli:** A city located in the central part of the monument area.
- Idaho:** The state located to the west of the Bitterroot Mountains.
- Montana:** The state located to the east of the Bitterroot Mountains.
- Washington:** The state located to the north of the Bitterroot Mountains.
- Oregon:** The state located to the south of the Bitterroot Mountains.
- Clearwater:** A river located in the north-central part of the monument area.
- Orofino:** A city located in the north-central part of the monument area.
- Lewis:** A city located in the north-central part of the monument area.
- Hezperce:** A city located in the north-central part of the monument area.
- Grangeville:** A city located in the north-central part of the monument area.
- Idaho:** The state located to the west of the Bitterroot Mountains.
- Montana:** The state located to the east of the Bitterroot Mountains.
- Washington:** The state located to the north of the Bitterroot Mountains.
- Oregon:** The state located to the south of the Bitterroot Mountains.
- Clearwater:** A river located in the north-central part of the monument area.
- Orofino:** A city located in the north-central part of the monument area.
- Lewis:** A city located in the north-central part of the monument area.
- Hezperce:** A city located in the north-central part of the monument area.
- Grangeville:** A city located in the north-central part of the monument area.



Mapping the Lewis & Clark Trail



Topographic Map of a Nez Perce Indian Trail

GPS Menagerie

**Trimble 3-Mode
Antenna**

**Laptop
PC**

**Trimble Backpack
Receiver**

**Trimble Ensign
Handheld**

**Power Supplies
and chargers
for 12V and 120V**

**Trimble
Scoutmaster
Handheld**

**Garmin
Etrex Vista
Handheld**

**Garmin 12XL
Handheld**

**Trimble
Data-logger
Computer**

**Garmin DGPS
Mag Antenna**

**Garmin DGPS
E-field Antenna**

**Cables for
connecting
units**



Initial Processing of Data

“A different kind of tailgating”



Map of the Expedition



Zig-Zag Searching for the Trail

It takes a large amount of searching all around to find the trail tread

A bear has been inspecting this old log in search of insects



Snow on the Trail in July



Steve F. Russell on The Lewis and Clark Trail



Newspapers

SUNDAY
February 27, 2000

GREAT FALLS TRIBUNE

High-tech equipment used to plot Lewis

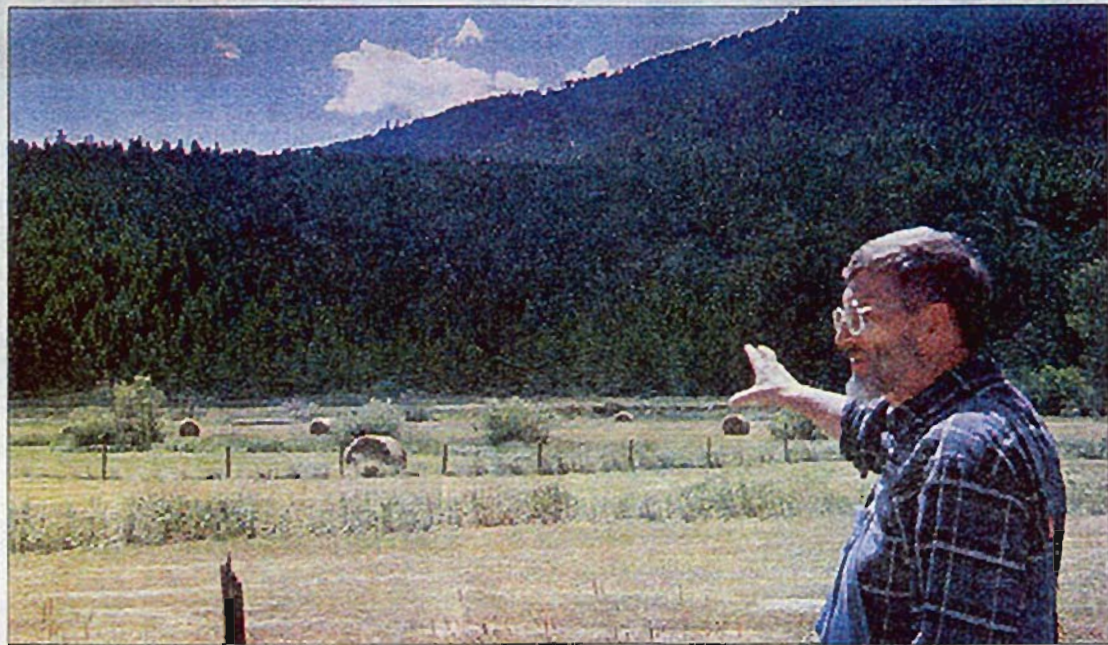
Satellites, journals
aid professor as he
traces historic trail

By DAN GALLAGHER
Associated Press Writer

BOISE, Idaho — For 15 summers, Iowa State University engineering professor Steve Russell has scrambled along the same forest deadfall and rocky hillsides that Meriwether Lewis and William Clark's Corps of Discovery encountered in Idaho's mountains two centuries ago.

But instead of a flintlock rifle and trade beads, Russell carries state-of-the-art mapping equipment to pinpoint within several feet the actual ground the expedition crossed as it went west over the treacherous Bitterroot Mountains in 1805 to reach the Lewiston area and the Nez Perce Tribe who acted as Samaritans to the starved and weary explorers.

"The Lolo Trail spans a land of history, exploration, courage, and danger," Russell said. "It is regrettable that we will never be able to fully learn about its early history but



1999 AP file photo

Iowa State University engineering professor Steve Russell looks at a pasture near Ross' Hole, Mont., in July, where Lewis and Clark met the Salish Tribe before crossing Montana's Bitterroot Mountains.

began. The route is largely untouched from the time it served as

changed so much. The mountain-scape "doesn't change," Russell

the North and Middle Forks of the Clearwater River, all looking at

Idaho
be
sh
er

cu
te
ca
Th
be
th
we

m
ch
Sy
en
ne
in
gr
sa

hi

se
an
ste
hi
cr
of
se

do
ca
s

Journals

IDAHO YESTERDAYS

VOLUME 44
THE JOURNAL OF THE IDAHO STATE HISTORICAL SOCIETY
No. 1, Spring 2000

Map of ADA COUNTY IDAHO

Showing
Geographical Features
Mathematical Items
Political Subdivisions

FEATURES

- 3 The Main Line Comes to Boise
by BARBARA PERRY BAUER

- 13 Report on the Feasibility of Irrigating
and Reclaiming Certain Desert Lands
in the Payette Valley, Ada County,
Idaho
by P. J. KINNEY

- 25 The Riddle of Hungry Creek,
September 18-20, 1805, and
June 16, 18, 25, 1806
by STEVE F. RUSSELL

On the Trail of Lewis and Clark

THE RIDDLE OF HUNGRY CREEK

SEPTEMBER 18-20, 1805,
AND JUNE 16, 18, 25, 1806

by Steve F. Russell

Fascination with the route and camping places of Lewis and Clark has remained strong for more than 100 years. With the approaching bicentennial of the Corps of Discovery, this interest is only intensifying. What is more, increasing numbers of people are interested in following the route themselves—not always a wise idea, as is certainly the case with the area described here.

This is the first in a series of articles that Steve Russell is preparing on his research of the route and camping sites as the Corps of Discovery crossed the mountains from the Missouri River basin to the Columbia River basin. Their passage through Hungry Creek and Fish Creek took them across what is now the Clearwater National Forest of north-central Idaho. They came through the area four times, once in 1805 and three times in 1806. The documentation of their various journals leaves us with a wealth of clues as to the route they followed, although William Clark's maps for this area are of limited value because of their topographic distortion.

The author, who was born in Lewiston, is an electrical engineer on the faculty of Iowa State University. His work on this project has grown as he has been more and more intrigued by the landscape crossed by the Corps—the campsites, the tread of prehistoric and historic trails, and the often very difficult terrain. His bibliography appears at the end of the article.

History of the Area The Nez Perce

Before they obtained the horse, the Nez Perce used foot trails to travel to important camping areas and family sites in the mountains, but these trails were probably very limited. After they began using horses for travel, things were different: frequent and relatively easy travel over a wide area became possible. Of the numerous Nez Perce horse trails, four were significant for this research.

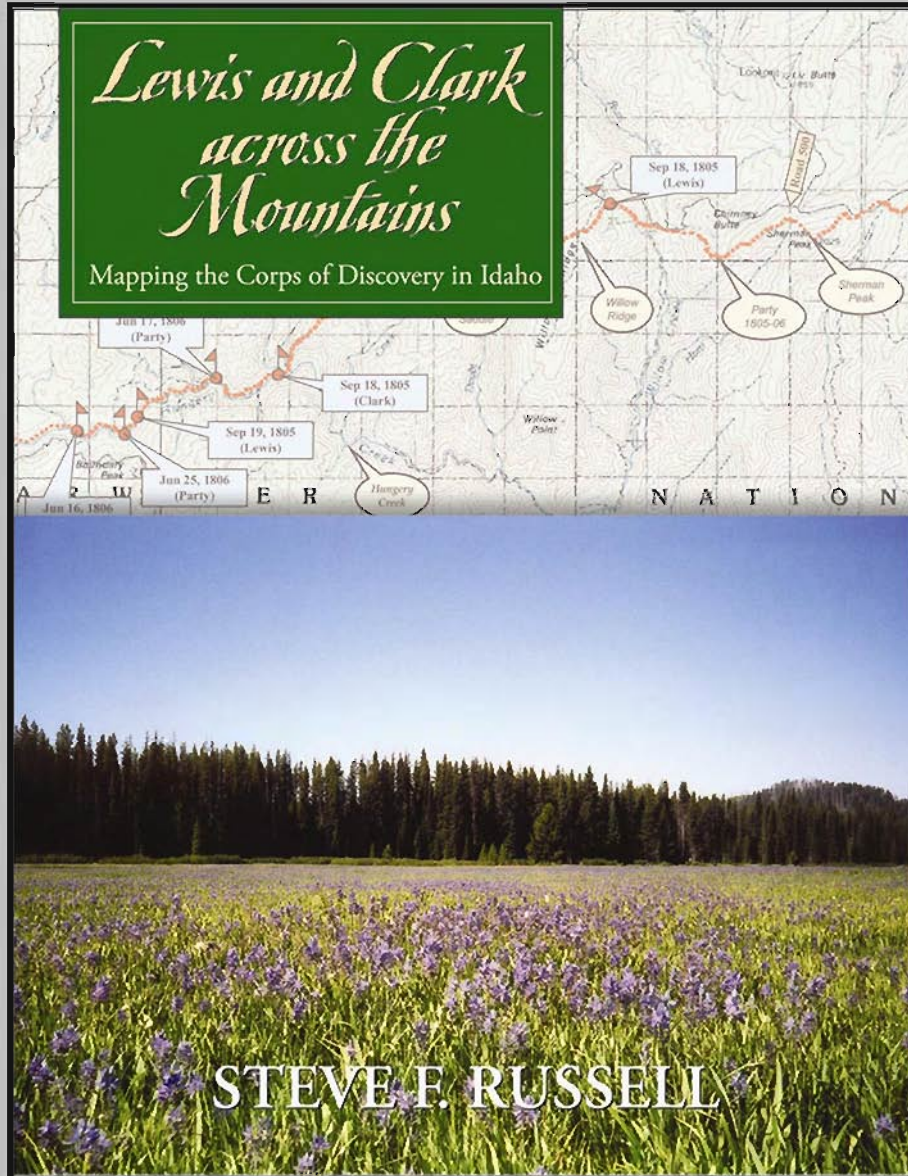
The first was the southern branch of the Nez Perce trail followed by Lewis and Clark through Hungry, Fish, and Eldorado Creeks. The second was a trail that went from upper Hungry Creek over Austin Ridge and down to Lolo Forks and then on to Musselshell Meadows. The third was the northern branch of the Nez Perce trail that went over Snowy Summit. The fourth route was the old Pete King Trail that went from the Lochsa River northward along the ridges to the Lolo Trail at Pete Forks Junction. It is highly probable that this trail had its origins in an ancient Nez Perce trail which connected villages on the upper Clearwater River with the Lolo Trail. In fact, it was probably the main link that connected the trails at the junction of the Lochsa and Selway Rivers with the Lolo Trail. For this article, the key part of the Pete King Trail is the segment that

went north and south through Fish Creek Meadows. Most of this trail has been abandoned, and the lower elevations of the trail have been significantly impacted by logging activities. The upper trail was incorporated into the fire-suppression trail system by the Forest Service.

The northern branch, which went over Snowy Summit, is the easiest route of the Lolo Trail System to follow into the Weippe Prairie. It is this route that George B. Nicholson chose for the Lewiston and Virginia City wagon road survey in 1866 and the route over which the Bird-Truax Trail would be constructed.¹ Why Lewis and Clark followed the southern branch through such rugged country when a much easier route (Snowy Summit) was available is still puzzling. My opinion is that the Hungry Creek route was used in early spring and late fall (an early-late route) when Snowy Summit was buried in deep snow. Another possibility is that this route was the one pointed out to unknown strangers entering the land of the Nez Perce.²

Olin D. Wheeler's explorations, undertaken in observance of the Corps of Discovery's centennial, led him to choose the route from Hungry Creek to Austin Ridge and then down to Lolo Forks. This was no doubt a good Nez Perce trail in his time, but the route does not match the journal descriptions or courses and distances.³

Books



Lewis and Clark Lolo Trail Precision Survey

Summary of Research Results



STEVE F. RUSSELL, PH.D., P.E.
Associate Professor
Iowa State University

More Books

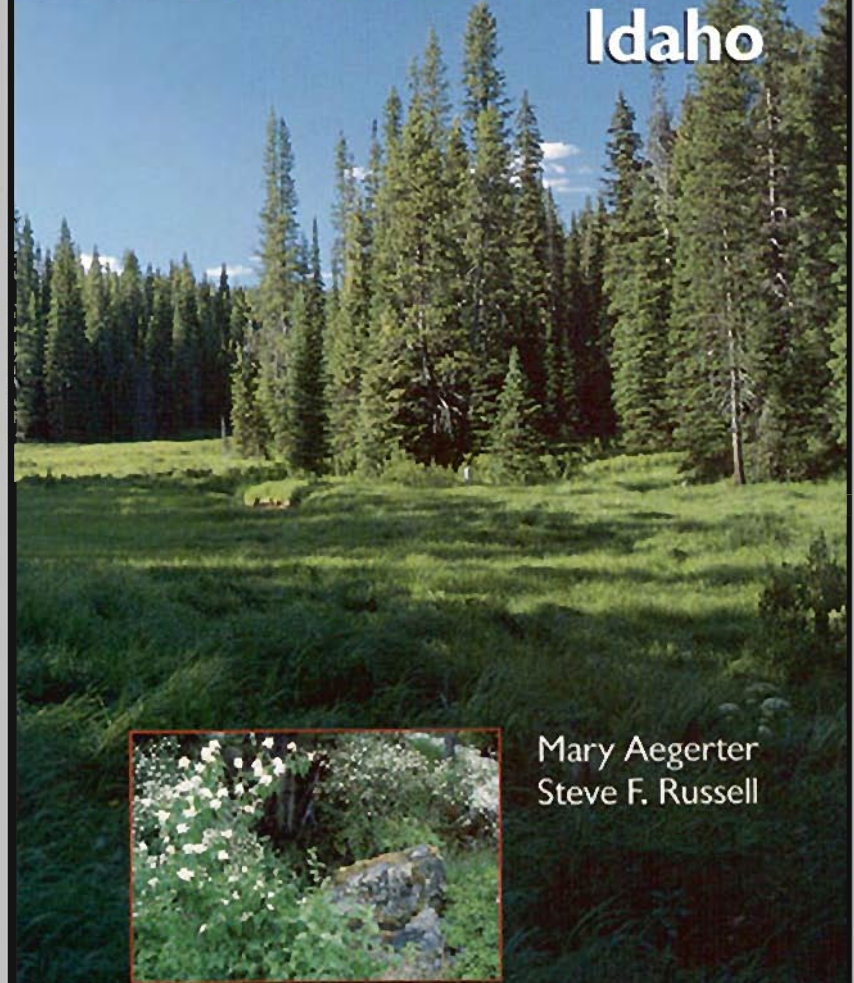
ACROSS THE SNOWY RANGES

*The Lewis and Clark Expedition
in Idaho and Western Montana*



WRITTEN BY JAMES R. FAZIO
PHOTOGRAPHY BY MIKE VENSO
CARTOGRAPHY BY STEVE F. RUSSELL

Hike Lewis and Clark's Idaho



Mary Aegerter
Steve F. Russell



Presentations

Fourth Annual Lewis and Clark Symposium

"Trails Through Time"

June 20-22, 2002

*Lewis-Clark State College
Lewiston, Idaho*

Two Centuries, Two Peoples: A Confluence of Histories

The 2002 Symposium will focus on mapping, studying, and retracing a part of the trail of the Corps of Discovery through the land of the Nez Perce. Speakers will present more specific views of culture, preservation, protection and the interaction of the two peoples:

***The Nez Perce Tribe and the
Lewis and Clark Corps of Discovery***

***"...this hi Mountain is covered with Spruce & Pitch
pine fir..." Capt. Clark, September 13, 1805
(Lolo Summit)***

Presentations

Welcome to a preview of the Lewis and Clark Symposium Presenters:



Dr. Joseph Mussulman, featured speaker, noted teacher, humanist, and author, has gained a nationwide reputation as a serious student of the Lewis and Clark expedition. He has written several articles and created maps of the expedition's route for several books, including *Along the Trail with Lewis and Clark*. He is also the producer and principal writer for the encyclopedic web site, *Discovering Lewis & Clark* (www.lewis-clark.org), which currently exceeds 1,300 pages. Dr. Mussulman will present the program, "Filling in the Zeros: Space, Pace, and Place on the Lewis & Clark Trail" on June 20, and "Men in High Spirits: Humor on the Lewis & Clark Trail" on June 21. Dr. Mussulman will also be performing music of the time of Lewis & Clark - In Greatest Harmony: "Medicine Songs" on the Lewis & Clark Trail at Brackenbury Square on Main St., Lewiston, Idaho.



Ron Craig, filmmaker-author, has made a one-hour documentary on "Who was York?" York was the only African-American member of the 1803-06 Corp of Discovery's expedition to the Northwest. Ron will present his program on June 20 entitled, "Who was York? A New Look at the Lewis and Clark Expedition."



Ken Karsmizki, noted archeologist, works with NASA combining airborne and satellite imagery with historic maps and Lewis & Clark journals to locate sites along the trail. On June 21, Ken will discuss the use of satellite remote sensing equipment in location and analysis of Lewis and Clark campsites.



Steve Russell, Associate Professor, Iowa State University, has researched the historic trails of the Lolo Trail corridor. His methods include the study of old maps, early aerial photos, pioneer survey notes, National Archive records and the journals of the expedition of Lewis and Clark. On June 21, Steve will present his program entitled, "Ordway's Salmon Fishing Excursion," and participate in a panel discussion of the study on the trail. He will also be involved in a book signing event at the Lewis-Clark Center for Arts and History on June 21. Steve will provide participants with historical overviews and interpretations on the bus tour to the Salmon Trout Camp

Emmy Wining Video

ECHOES OF A BITTER CROSSING
**LEWIS &
CLARK
IN IDAHO**

Video Available

Lewis and Clark were the first white men to set foot in Idaho. No other state can make that claim. But their fabled journey through Idaho's Bitterroot Mountains nearly defeated the Expedition. Two hundred years later Idaho Public Television examines the most difficult part of the Lewis and Clark Trail with a modern day group of explorers.

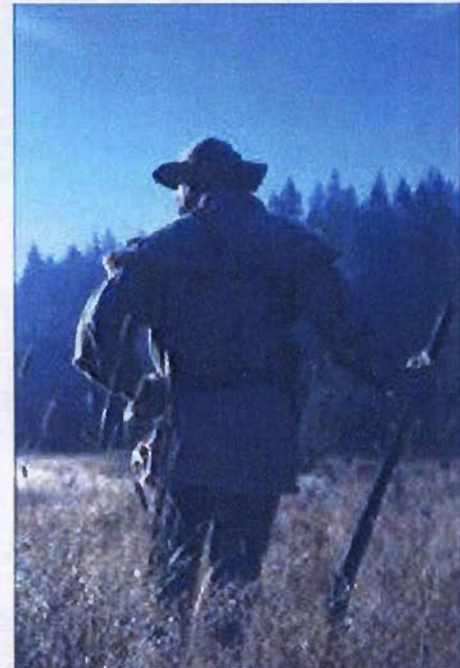


Copies of the hour long "Echoes of a Bitter Crossing: Lewis & Clark in Idaho" are available for purchase from Idaho Public Television by calling toll free 1-877-224-

7200 or, in Boise, 373-7220. The cost of the video is \$19.95 (\$20.95 with tax).

Also available is the half-hour OUTDOOR IDAHO version, "Lewis & Clark in Idaho". The cost of this video is \$16.95 (\$17.80 with tax).

There is a shipping fee of \$4.00 for the first tape and \$.50 for each additional tape.



ORDER

BACK TO: [Lewis & Clark In Idaho](#)

The People

Award Winning Website

Program Description

The Interactive Journey

Historian Gary Moulton

A GPS Expert on the Trail ←

A Campfire Discussion

Dugout Canoes on the Clearwater

What If... The Salmon River

The Journey of Sacagawea

A Native American Perspective

The Return Trip

ECHOES OF A BITTER CROSSING
**LEWIS &
CLARK
IN IDAHO**

Video Available

Watch the Show

Test Your Knowledge

Related Sites

A Production of Idaho Public Television

Workshops

**“On the Trail with Lewis and Clark”
Sawtooth Science Institute
Idaho State University
2002**



Idaho 5th Grade Teachers at Lewis' first Idaho Campsite

Photo Gallery

Salmon River Canyon in Idaho



**“Making Friends”
on the Trail**



Last surviving plaque put along the trail by Jack Harlan, 1935





“Junior”

Sunrise - Salmon River Canyon in Idaho





Surveying the Lewis & Clark Trail



Theo Peterson

The Corps of Discovery

1804-1806

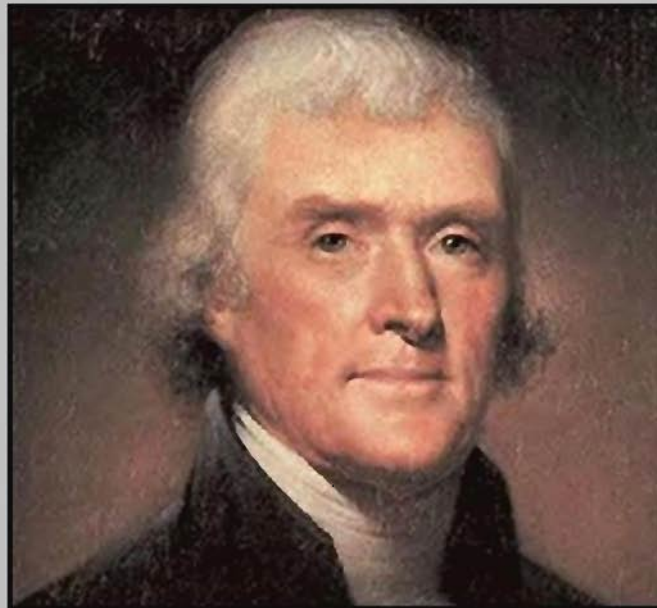
Exploring the Louisiana Purchase of 1803

Thomas Jefferson

President of the United States 1801 – 1809

Author of the Declaration of American Independence

Acquired the Louisiana Territory in 1803



Cone Flowers and Stinging Nettles

“Are we having fun yet”



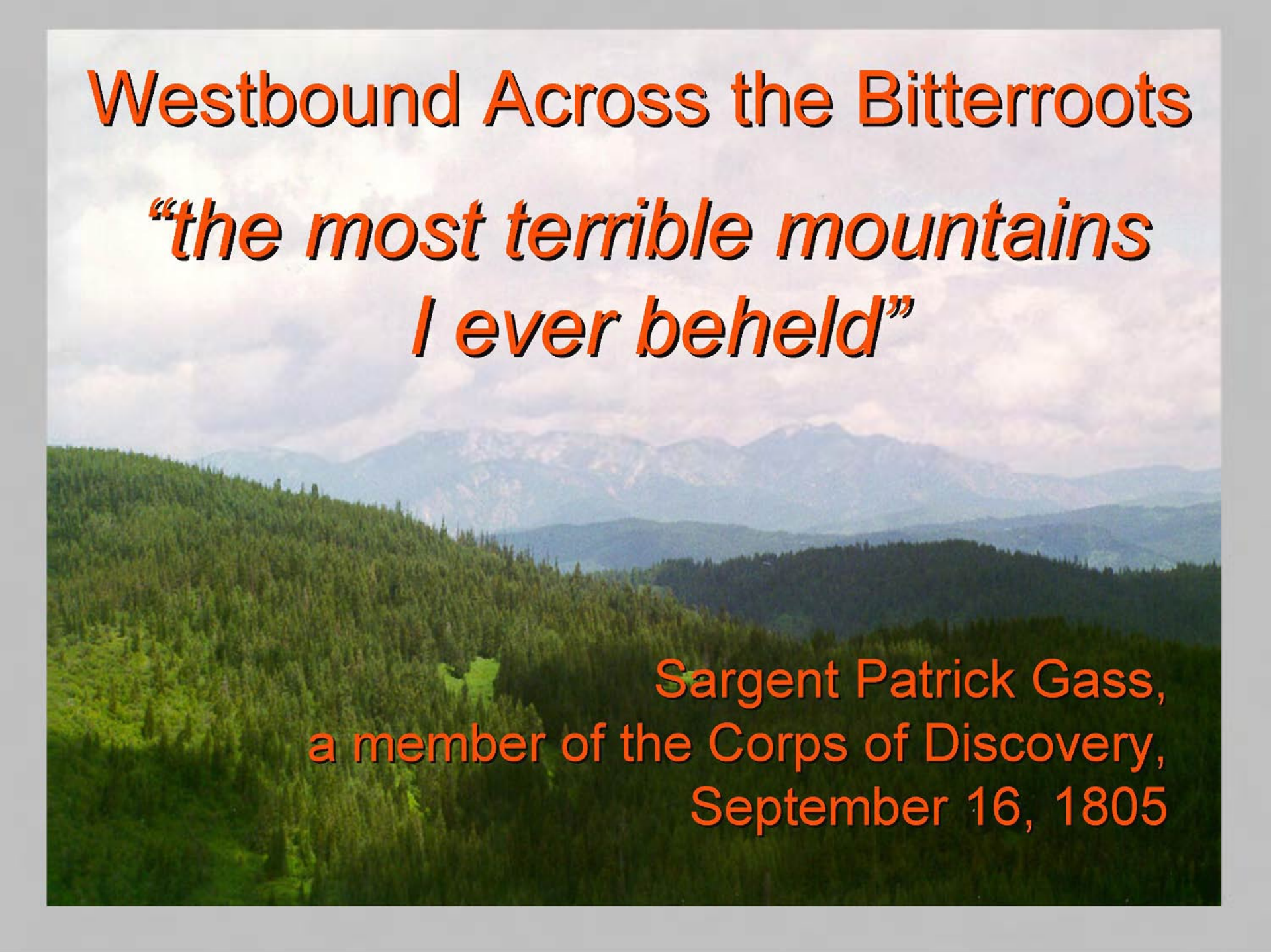
Matt Battani



Land of the Nez Perce



Ancient Rock Cairns



Westbound Across the Bitterroots

*“the most terrible mountains
I ever beheld”*

Sargent Patrick Gass,
a member of the Corps of Discovery,
September 16, 1805

Camping with the Nez Perce



LOLO SUMMIT

THE LEWIS AND CLARK PARTY CROSSED THIS PASS SEPT. 13, 1805, WESTBOUND FOR THE PACIFIC AFTER A LONG DETOUR TO THE SOUTH.

From the headwaters of the Missouri they had crossed the mountains to the Salmon. Finding that river impassable, they traded for packhorses, hired an Indian guide, and came north to an Indian trail across the mountains here. Tired and ill-fed, the men were to have a hard struggle in early snow along the steep ridges which the trail followed for most of its 125 mile course west to the Clearwater River.

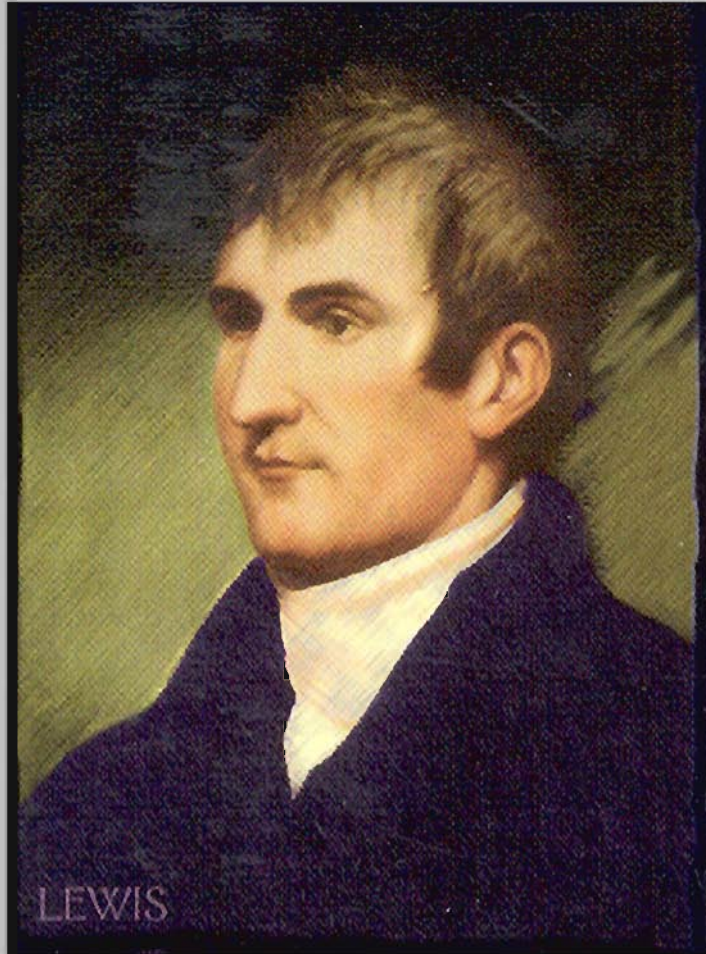
247

The End

Questions?

Meriwether Lewis and William Clark

Co-Captains and Leaders



“The Naturalist”



“The Map Maker”

The Corps of Discovery

Expedition Members

- William Bratton
- Jean Baptiste Charbonneau
- Toussaint Charbonneau
- William Clark
- John Collins
- John Colter
- Pierre Cruzatte
- George Drouillard (Drewyer)
- Joseph Fields
- Reubin Fields
- Robert Frazier
- Patrick Gass.
- George Gibson
- Silas Goodrich
- Thomas Howard
- Francois Labiche
- Jean Baptiste Lapage
- Meriwether Lewis
- Hugh McNeal
- John Ordway
- John Potts
- Nathaniel Pryor
- Sacajawea (wife of Charbonneau)
- Seaman (Lewis' dog)
- George Shannon
- John Shields.
- John Thompson
- Peter Weiser
- William Werner
- Joseph Whitehouse
- Alexander Willard
- Richard Windsor
- York – Clark's slave

The History

President Jefferson's Instructions to Captain Lewis

- **Find the most practical water route to the Pacific Ocean (follow the Missouri and Columbia Rivers to their sources)**
- **Establish friendly relationships with all tribes encountered and record information about them**
- **Map the country traveled**
- **Document new species of plants and animals encountered**